L 8007-65
ACCESSION NR: AP4044951

crystals were grown by the Czochralski method in the <111> direction. The following interconnected main factors were found experimentally to be responsible for polytropy of impurities: formation of the M_xA_y-type complexes (where M is a semiconductor and A is an impurity) and clusters; inclusions of the second phase formed during [illegible] crystallization; formation of an impurity [illegible] dislocations; [illegible] formation of an impurity sublattice [illegible] with [illegible] linear segregation of the [illegible] possible [illegible] the petlocical distribution of resistivity [illegible] cross section of a crystal. Aging or heat treatment of germanium crystals [illegible] led in an increase of the carrier [illegible] critical [illegible] agreement between the Hall measurement [illegible] data. [illegible] of dislocations and concentration of [illegible] increased at the same time. These facts are explained [illegible] ration of [illegible] purity into solid solution. [illegible] the heat [illegible] did not produce the same [illegible]

[illegible]N NR: AP4044951

[illegible] dependent on the conditions of [illegible] the nature of [illegible]ving impurity and the [illegible] of the [illegible] and the base component of [illegible] important [illegible] the appearance of polytropy, since [illegible] is depend[illegible] distribution coefficient [illegible] has: [illegible] and 1 formula.

[illegible]ATION: Gosudarstvennyy [illegible] institut [illegible] promy*shlennosti [illegible] [illegible] of the rare metals [illegible]

L 10776-65 EWT(m)/EWP(b) [illegible]/ESD(t)/ESD(gs)/ASD(a)-5/AS [illegible] APWL JD

ACCESSION NR: AP4044958 S/0181/64/006/009/2825/2830

AUTHORS: Andrianov, D. G.; Dakhovskiy, I. V.; Omel'yanovskiy, E. M.; Fistul', V. I.

TITLE: Anisotropic scattering of electrons in heavily doped germanium

SOURCE: Fizika tverdogo tela, v. 6, no. 9, 1964, 2825-2830

TOPIC TAGS: germanium, electron scattering, electron mobility, galvanomagnetic effect, impurity scattering, phonon scattering

ABSTRACT: Comparison of the values of the electron mobility in heavily doped n-type germanium, determined by Fistul', Iglitsyn, Omel'yanovskiy, and Andriyanov (FTT, 4, 1065, 1370, 1962; [illegible], 479, 1964) with the theory of scattering by acoustical phonons and ionized impurities has failed to give even qualitative agreement. The present paper compares the theory of the anisotropic scattering

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L 10776-65
ACCESSION NR: AP4044958

with the galvanomagnetic effect data (reference as above) for As-doped n-type germanium obtained for a wide range of impurity concentrations and temperatures. Expressions are obtained for the components of the relaxation time tensor in the case of scattering from impurity ions in general. It is shown that the electron scattering in heavily doped germanium is basically anisotropic and that the components of the effective mass tensor are independent of the impurity concentration and temperature. "The authors thank Prof. A. G. Samoylovich for discussing the results and for advice." Orig. art. has: 2 figures, and 9 formulas.

ASSOCIATION: Gosudarstvenny*y nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskoy promy"shlennosti, Moscow (State Scientific-Research and Design Institute of the Rare-Metal Industry)

SUBMITTED: 03Jan64

SUB CODE: SS NR REF SOV: 010 OTHER: 003

Card 2/2

[illegible] Aliyev, M. I.; Fistul', V. I.; Arasly, [illegible]

TITLE: Investigation of the thermal conductivity of strongly doped semiconductors

SOURCE: Fizika tverdogo tela, v. 6, no. 12, 1964, 3700-3701

TOPIC TAGS: germanium, arsenic, gallium, single crystal, doping, thermal conductivity, phonon, temperature dependence

ABSTRACT: In view of the interest in strongly doped semiconductors, the authors investigated the thermal conductivity of germanium strongly doped with arsenic and gallium. The single crystals of germanium were doped as they were drawn from the melt. The impurity concentration, determined from measurements of the Hall effect, amounted to 1.4×10^{14} -- 1×10^{20} cm^{-3}. The thermal conductivity was measured by a stationary method. A plot of the coefficient of thermal conductivity as a function of the impurity concentration at 300K is shown in Fig. 1 of the Enclosure. Calculations show that the electronic fraction of the thermal conductivity is insignificant and that the main role in the heat transfer is played

Card 1/3

ACCESSION NR: AP5000672

by the phonons. Consequently the decrease in the thermal conductivity at large [illegible] concentration is due to scattering of phonons by the impurity atoms. [illegible] from the figure that the thermal [illegible] concentration than that of p-Te. [illegible] the temperature dependence of the thermal [illegible] a later paper. Orig. art. has: 1 figure.

ASSOCIATION: Institut fiziki AN AzerbSSR, Baku (Institute of Physics, AN AzerbSSR)

SUBMITTED: 17Jun64 ENCL: 01

SUB CODE: SS NR REF SOV: 003 OTHER: 003

Card 2/3

L 18291-65
ACCESSION NR: AP5000672

ENCLOSURE: 01

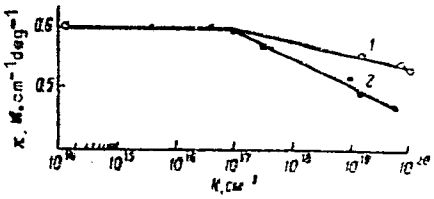

Fig. 1. Dependence of the coefficient of thermal conductivity on the impurity concentration at 300K for p-type (1) and n-type (2) germanium

Card 3/3

L 20282-65 EWT(m)/EWP(t)/EWP(b) IJP(c)/SSD/AFWL/ASD(a)-5/BAEM(a)/BAEM(c)/ESD(c)/ESD(gs)/BB(t)

ACCESSION NR: AP5000692 S/0181/64/006/012/3738/3740

AUTHOR: Fistul', V. I.

TITLE: Determination of the deep copper level in GaAs by the tunnel spectroscopy method

SOURCE: Fizika tverdogo tela, v. 6, no. 12, 1964, 3738-3740

TOPIC TAGS: p-n junction, tunnel diode, Hall mobility, thermal emf, Nernst-Ettingshausen effect

ABSTRACT: The tunnel spectroscopy method requires a p-n junction of a tunnel diode with a deep level (for example, copper level) in the n- and p-type regions of the crystal. The current of electrons from the conduction band to the copper level E_{Cu} in the n-type region begins to flow when

$$U_1 = E_{Cu} + \mu_p$$

where U_1 is the external voltage applied to the junction. It follows that to determine E_{Cu} it is sufficient to know the position of the Fermi level (μ_p) in the

L 20282-65
ACCESSION NR: AP5000692

p-type region of the crystal and to determine experimentally the bias voltage U_1 at the point where an additional current begins to flow near a minimum in the current-voltage characteristic of the tunnel diode. This method was applied to the determination of the deep level of copper in GaAs. The GaAs crystals were doped with zinc up to $(4--5) \times 10^{19}$ cm^{-3}. Copper was introduced during the pre- [illegible] of the p-n junction. The measurements of the Hall [illegible], thermal [illegible] transverse Nernst-Ettingshausen effect made it [illegible] estimate the [illegible] of μ_p, which was found to be 0.065 ± 0.00[illegible] eV at liquid nitrogen tempera- [illegible]. The value of U varied from diode to diode within the limits [illegible] V. [illegible] was found that E_{Cu} = 0.44 ± 0.0[illegible]3 eV, which was in good agreement with [illegible] eV obtained from the photoconductivity measurements [illegible] [illegible] R. Weisberg, J. Phys. Chem. S[illegible] [illegible] V. N. Rav[illegible]ch, A. M. Ageev, and A. [illegible] carrying [illegible] work." Orig. art. has: 2 figures and 2 formulas.

ASSOCIATION: Gosudarstvenny*y nauchno-issledovatel'skiy i proyektny*y institut redk[illegible]etallicheskoy promy*shlennosti, Moskva (State Scientific Research and [illegible] Institute of the Rare-Metal Industry).

SUBMITTED: 15Jul64 ENCL: 00

SUB CODE: SS NR REF SOV: 001 OTHER: 001

Card 2/2

MIL'VIDSKIY, M.G.; FISTUL', V.I.; GRISHINA, S.P.

Behavior of impurities in heavily doped semiconductors. Fiz. tver. tela 6 no.9:2762-2770 S '64.

(MIRA 17:11)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut redkometallicheskoy promyshlennosti, Moskva.

ANDRIANOV, D.G.; DAKHOVSKIY, I.V.; OMEL'YANOVSKIY, E.M.; FISTUL', V.I.

Anisotropic electron scattering in heavily doped germanium.
Fiz. tver. tela 6 no.9:2825-2830 S '64.

(MIRA 17:11)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskoy promyshlennosti, Moskva.

ALIYEV, M.I.; FISTUL', V.I.; ARASLY, D.G.

Heat conductivity of heavily doped germanium. Fiz. tver. tela 6 no.12:3700 D '64 (MIRA 18:2)

1. Institut fiziki AN AzSSR, Baku.

FISTUL', V.I.

Use of the tunnel spectroscopy method in determining a deep copper level in GaAs. Fiz. tver. tela 6 no.12:3738-3740 D '64
(MIRA 18:2)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskoy promyshlennosti, Moskva.

EWT(l)/EWT(m)/EWP(t)/EWP(b) IJP(c) JD

ACCESSION NR: AP5006884 S/0181/65/007/003/0796/0801

AUTHOR: Andrianov, D. G.; Fistul', V. I.

TITLE: Planar Hall effect in strongly doped germanium

SOURCE: Fizika tverdogo tela, v. 7, no. 3, 1965, 796-801

TOPIC TAGS: Hall effect, planar Hall effect, n type germanium, doping, semicon-

ABSTRACT: Theoretical expressions are presented for the kinetic coefficients of effect with account of the anisotropy of the effective masses of the carriers and the relaxation time. The planar Hall effect consists in the pro- an electric field perpendicular to the current flowing through a cry- magnetic field, with all three vectors

rare ions in germanium can be described by a

equivalent energy

L 4.9029-65

ACCESSION NR: AP5006884

effect was measured in n-Ge with electron density 10^{16}--? x 10^{18} cm^{-3}. The meas-

ENCL:

OTHER: 005

L 36227-65 EWT(1)/EWT(m)/T/EWP(t)/EWP(b)/EWA(b) Pz-6/Pab IJP(c) JD/JG/AT

ACCESSION NR: AP5007108 S/0109/65/010/003/0573/0574

AUTHOR: Agayev, A. M.; Zakhvatkin, G. V.; Iglitsyn, M. I.; Pervova, L. Ya.; Fistul', V. I.

TITLE: Inductive properties of p-n junctions in deep-level germanium

SOURCE: Radiotekhnika i elektronika, v. 10, no. 3, 1965, 573-574

TOPIC TAGS: semiconductor, pn junction

ABSTRACT: An experimental study of inductive susceptance of p-n junctions in Ge containing deep recombination centers is briefly reported. Ge specimens were doped with gold to a donor-impurity concentration of 1.3×10^{15} per cm^3 and tested at 0.75–12 Mc with currents from 0.003 to 6 mamp. The susceptance changed its sign at a 200-mv forward bias. A plot of the inductive susceptance vs frequency is supplied. Orig. art. has: 2 figures and 1 formula. [03]

ASSOCIATION: none

SUBMITTED: 16Apr64 ENCL: 00 SUB CODE: SS

NO REF SOV: 004 OTHER: 002 ATD PRESS: 3220

Card 1/1

ACCESSION NR: AP5017851

[illegible] high-alloy germanium [illegible]

[illegible] Byulleten' izobreteniy i tovarnykh znakov, no. 11, 1965, 82

TOPIC TAGS: germanium, germanium single crystal, heat [illegible]

ABSTRACT: This Author Certificate introduces a method of producing high-alloy germanium single crystals of electron-type conductivity by drawing from the melt. In order to obtain high-alloy single crystals with stable [illegible] the crystals are heat treated for 3-- hr at ab[illegible]

WW

ASSOCIATION: none

SUBMITTED: 10Jan63 ENCL: 00 SUB CODE: MM, SS

NO REF SOV: 000 OTHER: 000 ATD PRESS: 4050

Card 1/1

L 10581-66 EWT(m)/EWP(t)/EWP(b) IJP(c) JD
ACC NR: AP5025384 SOURCE CODE: UR/0181/65/007/010/3042/3047

AUTHOR: Fistul', V. I.; Agayev, A. M.

ORG: State Design and Planning Scientific Research Institute of the Rare Metals Industry, Moscow (Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskoy promyshlennosti)

TITLE: Properties of the electron spectrum in heavily doped gallium arsenide

SOURCE: Fizika tverdogo tela, v. 7, no. 10, 1965, 3042-3047

TOPIC TAGS: gallium arsenide, tunnel diode, pn junction, volt ampere characteristic, electron spectrum, forbidden band

ABSTRACT: The expression for tunneling in the case of a continuous spectrum of levels in the forbidden band is

$$I = AD \exp\left\{-\frac{\alpha w \tilde{m}^{1/2}}{2}\left[E_p - eU + (\mu_p + \mu_n)\right]\right\}. \quad (1)$$

where

$$\alpha = \frac{4(2\tilde{m})^{1/2}}{3\sigma\hbar}\theta, \quad \theta \approx 1,$$

$$w = \sqrt{\frac{\varkappa}{2\pi e}\frac{N_a + N_d}{N_a N_d}},$$

$$\tilde{m} = \frac{m_n m_p}{m_n + m_p},$$

Card 1/3

I is the excess current of the tunnel diode; U is the bias at the p-n junction; D is the density of allowed levels; N_a and N_d are the concentrations of acceptors and donors on both sides of the p-n junction; μ_n and μ_p are the degrees of degeneration in the n- and p-regions of the crystal; E_g is the width of the forbidden band; χ is the characteristic constant of the semiconductor; and A is the constant which accounts for the area of the p-n junction. This paper gives experimental data on the "tail" of the density of states (AD) determined from this formula in the forbidden band of heavily doped gallium arsenide. AD is determined by finding the value of μ in the diffuse region of the diode without determining the concentration of majority charge carriers. Copper was added directly to zinc-doped GaAs crystals during formation of the p-n junction. A cathode-ray curve tracer was used with double differentiation of the current-voltage characteristics. A simple comparison of current-voltage curves for p-n junctions with and without copper at various temperatures shows that the copper causes a considerable increase in the excess current, and a shift in minimum current toward lower biases. The tunnel component of the curve was not affected: I_p and U_p remained constant. After taking the various parameters in formula (1) into consideration and assuming that μ_n, μ_p, w and m_n are the same for diodes with and without copper, $\bar{m}$ was calculated and values of AD were determined from current-voltage curves for junctions without copper. The results are shown in the figure.

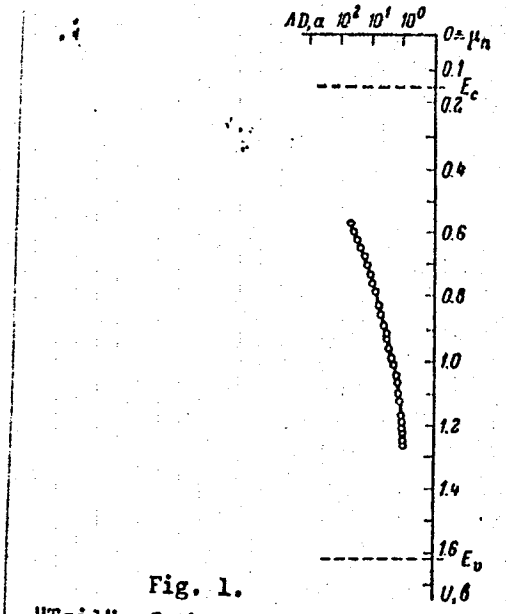

Fig. 1.
"Tail" of the density of states in the forbidden band of GaAs.

The authors thank V. N. Ravich and A. P. Fedosov for making the *p-n* junctions used in control measurements. Orig. art. has: 5 figures, 9 formulas.

SUB CODE: 20/ SUBM DATE: 03Mar65/ ORIG REF: 007/ OTH REF: 004

L 14123-66 EWT(m)/EWP(t)/EWP(z)/EWP(b) LJP(c) JD/HW
ACC NR: AP6000888 SOURCE CODE: UR/0181/65/007/012/3681/3682

AUTHORS: Fistul', V. I.; Agayev, A. M.

43
B

ORG: State Scientific-research and Design Institute of the Rare-Metal Industry, Moscow (Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskoy promyshlennosti)

TITLE: Determination of deep levels of Fe, Ni, and Co in gallium arsenide

SOURCE: Fizika tverdogo tela, v. 7, no. 12, 1965, 3681-3682

TOPIC TAGS: impurity level, gallium arsenide, forbidden band

ABSTRACT: This is a continuation of earlier work (FTT v. 6, 3738, 1964), where it was shown that the position of the deep levels in the forbidden band of semiconductors can be determined by the tunnel spectroscopy method. This method was used in the present investigation to find the deep levels of Fe, Ni, and Co in gallium arsenide, which were found to lie at 0.36 ± 0.02 (0.59 ± 0.02), 0.53 ± 0.03,

Card 1/2

2

L 14123-66
ACC NR: AP6000888

and 0.54 ± 0.03, respectively, measured from the top of the valence band of the pure semiconductor. (two levels were observed for iron). The procedure for preparing special diodes and doping them was described in the earlier paper and also in FTT v. 7, 3042, 1965. The activation energy of the first level of iron (0.36) agrees well with the value 0.37 obtained by others. Orig. art. has: 1 table.

SUB CODE: 20/ SUBM DATE: 10Jul65/ ORIG REF: 003/ OTH REF: 002

Card 2/2

L 18053-66 EWP(e)/EWT(m)/T/EWP(t) IJP(c) JD/WW/GS/WH

ACC NR: AT6006172 SOURCE CODE: UR/0000/65/000/000/0130/0134

62
B+1

AUTHOR: Chupakhin, M. S.; Glavin, G. G.; Fistul', V. I.

ORG: none

TITLE: Atomic aggregates in semiconductor materials

SOURCE: Khimicheskaya svyaz' v poluprovodnikakh i tvardykh telak (Chemical bond in semiconductors and solids). Minsk, Nauka i tekhnika, 1965, 130-134

TOPIC TAGS: mass spectrum, graphite, silicon, silicon carbide, gallium arsenide

ABSTRACT: Mass spectra of graphite, silicon, silicon carbide, and gallium arsenide were taken with a high resolution mass spectrometer and analyzed. It was often found that the mass spectra contained lines characteristic of ionic species of multiatomic aggregates in very minute concentrations (as low as 10^{-7}%). It was found that the yield of such charged multiatomic aggregates is independent of discharge intensity within 40-70 kev, pulse frequency within 10-30,000 cps, and pulse duration within 25-200 μsec. An analysis of the mass spectra of graphite, silicon, and silicon carbide is presented. In crystals of silicon-arsenic alloys, a correlation

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L 18053-66
ACC NR: AT6006172

was found between the yield of charged multiatomic aggregates and the arsenic content in the alloy. It is concluded that the correlation between the yield of charged multiatomic aggregates and the physical properties of the solid materials indicates that mass spectra of multiatomic molecules reflect the structure of the solid crystal lattice. Orig. art. has: 2 figures, 2 tables.

SUB CODE: 07,20/ SUBM DATE: 31May65/ ORIG REF: 003/ OTH REF: 000

Card 2/2 SM

FISTUL', V.I.; AGAYEV, A.M.

Determining deep layers of Fe, Ni, and Co in gallium arsenide.
Fiz. tver. tela 7 no. 12:3681-3682 D '65 (MIRA 19:1)

1. Gosudarstvennyy nauchno-issledovatel'ski i proyektnyy institut redkometallicheskoy promyshlennosti, Moskva.

L 22931-66 EWT(m)/EWP(t) IJP(c) JD/JG

ACC NR: AP6013343 SOURCE CODE: UR/0363/66/002/004/0657/0658

AUTHOR: Fistul', V. I.; Omel'yanovskiy, E. M.; Pelevin, O. V.; Ufimtsev, V. B.

ORG: Giredmet

51
B

TITLE: The effect of the nature of dopant on electron scattering and polytropy of dopant in n-type gallium arsenide

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 4, 1966, 657-658

TOPIC TAGS: gallium arsenide, single crystal, semiconductor single crystal, activated crystal, donor impurity, electron mobility, carrier scattering, Hall mobility, impurity polytropy

ABSTRACT: The nature of the dopant was found to influence the electrical property of gallium arsenide single crystals doped with Te, Se, or S in widely varied concentrations in a manner analogous to that observed earlier in strongly doped semicondcutor Ge and Si. Single crystals were grown by an oriented crystallization technique under conditions which secured uniform distribution of impurity. Hall mobility at 300K was found to decrease in the sequence $u_{Te} > u_{Se} > u_S$ with increasing electron concentration in the sample. In agreement with theory this pattern of change in electron mobility reflected the effect of the nature of the dopant on scattering of electrons. Another effect of the nature of the dopant was detected in a study of the relation between electron concentration and atomic concentration of the dopant, as determined by

Card 1/2 UDC: 537.311.33:546.681'191

ACC NR: AP6013343

chemical analysis. This effect was described as polytropy of impurity (dopant), i.e., the appearance of a part of impurity atoms in the crystal in a form, probably as a near order complex, deprived of the donor property. The polytropy was increasing in the sequence Te < Se < S at equal atomic concentration. Orig. art. has: 2 figures. [JK]

SUB CODE: 07/ SUBM DATE: 090ct65/ ORIG REF: 002/ OTH REF: 004/ ATD PRESS: 4237

L 36930-66 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6012218 SOURCE CODE: UR/0032/66/032/004/0448/0450

AUTHOR: Omel'yanovskiy, E. M.; Meyer, A. A.; Fistul', V. I.

ORG: State Research and Design Institute for the Rare Metal Industry (Gosudarstvennyy nauchno-issledovatel'skiy i proektnyy institut redkometallicheskoy promyshlennosti)

TITLE: Determination of the concentrations of donors and acceptors by separation

SOURCE: Zavodskaya laboratoriya, v. 32, no. 4, 1966, 448-450

TOPIC TAGS: quantitative analysis, electron donor, electron acceptor, germanium, silicon

ABSTRACT: The method proposed in the article is based on the assumption that the transfer of free charge carriers in crystals of the germanium and silicon type is connected with their dispersion in the ionized atoms of the impurity and in the acoustical vibrations of the lattice, while the contribution of other possible mechanisms of dispersion may be neglected. On this basis, the article proceeds to a mathematical treatment of the problem. As an experimental check of the expressions arrived at, measurements were made of the temperature dependence of the

Card 1/2 UDC: 537.311.33

L 36930-66

ACC NR: AP6012218 0

mobility in germanium alloyed with arsenic, over a wide range of concentrations of the alloying impurity. Results of the actual experiments, shown in a figure, agree in a satisfactory way with the theoretical deductions. Orig. art. has: 6 formulas and 2 figures.

SUB CODE: 07, 20/ SUBM DATE: none/ ORIG REF: 005/ OTH REF: 004

Card 2/2

L 40367-66 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6014244 SOURCE CODE: UR/0109/66/011/005/0894/0900

AUTHOR: Iglitsyn, M. I.; Pervova, L. Ya.; Fistul', V. I.

ORG: none

36 B

TITLE: Instability in gold-doped n-type germanium upon carrier injection

SOURCE: Radiotekhnika i elektronika, v. 11, no. 5, 1966, 894-900

TOPIC TAGS: germanium semiconductor, semiconductor research

ABSTRACT: Sb- and Au-doped n-Ge 1x1-mm plates (0.003-mm thick) were tested; three lots of specimens had these parameters:

Lot	ρ ohm·cm, 300°K	ρ ohm·cm, 77°K	N_{Au}, per cm³	$\frac{N_{Sb}-N_{Au}}{N_{Sb}}$ %	
B	3	60	$6\cdot10^{14}$	107	$2N_{Au} < N_{Sb} < 3N_{Au}$
A	3	585	$6\cdot10^{14}$	101	
C	2,3	$>10^4$	$1,2\cdot10^{15}$	68	$N_{Au} < N_{Sb} < 2N_{Au}$

The deep-level specimens were tested for: I-V characteristics, susceptance vs. current characteristic, frequency characteristics, and effect of illumination.

Card 1/2 UDC: 539.293.011.263.2:546.289

L 40367-66
ACC NR: AP6014244

The electric current instability was recorded. Lots A and C exhibited a complex pattern of instability which could be explained by the fact that the minority-carrier injection took place in a strong electric field (thousands v/cm), while in B-lot specimens, the injection occurred in a rather weak (850 v/cm or lower) field. On the strength of the above tests and results reported by M. Kikuchi et al. (J. Phys. Soc. Japan, 1962, 17, 8, 1268) and other sources, the mechanism of the instability phenomena is conjectured. Orig. art. has: 4 figures and 1 table.

SUB CODE: 09 / SUBM DATE: 12Jan65 / ORIG REF: 006 / OTH REF: 004

Card 2/2 hs

ACC NR: AP7004579 SOURCE CODE: UR/0413/66/000/018/0111/0111

INVENTOR: Andrianov, D. G.; Fistul', V. I.

ORG: none

TITLE: Method for determining orientation of a magnetic field and angles of rotation. Class 42, No. 186154

SOURCE: Izobreteniya, promyshlennye obraztsy, tovarnyye znaki, no. 18, 1966, 111

TOPIC TAGS: magnetic field, magnetic field measurement

ABSTRACT: Author's Certificate No. 186154, dated 11 August 1964, has been issued to D. G. Andrianov and V. I. Fistul' for a method described as follows: "A method for determining the orientation of the magnetic field and the angles of rotation, using a Hall emf semiconductor sensor. It differs in that for the purpose of increasing the response the sensor is situated in the magnetic field in such a way that the vectors of current density, the magnetic field and the measured transverse emf lie in a single plane. [JPRS: 38,937]

SUB CODE: 20 / SUBM DATE: none

Card 1/1 UDC: 621.317.444.013.24:538.632

0926 1402

ACC NR: AP6033586 SOURCE CODE: UR/0181/66/008/010/3135/3138

AUTHOR: Rashevskaya, Ye. P.; Fistul', V. I.; Mil'vidskiy, M. G.

ORG: State Scientific Research and Design Institute of the Rare Metal Industry, Moscow (Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskoy promyshlennosti)

TITLE: Effective mass of electrons in gallium arsenide

SOURCE: Fizika tverdogo tela, v. 8, no. 10, 1966, 3135-3138

TOPIC TAGS: gallium arsenide, effective mass, ir spectrum, carrier density, light reflection coefficient, conduction band, thermal emf, electron scattering

ABSTRACT: This is a continuation of earlier work on the effective mass of the electrons in GaAs (FTT v. 7, 3488, 1965). The present paper reports on a systematic investigation of the dependence of the optical or inertial effective mass of the electrons on their concentration by means of infrared reflection spectra. The samples were n-type GaAs single crystal doped with S, Se, and Te. The measurements were made with an IKS-12 spectrometer at room temperature. The optic effective mass as a function of the carrier density ($2.1 \times 10^{18} - 1.23 \times 10^{19}$ cm^{-1}) was determined from the reflection-coefficient curves by a standard procedure. The effective mass increas

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ACC NR: AP6033586

increases with the density, starting with $\sim 3 \times 10^{18}$ cm^{-3}, and is independent of the doping impurity. The shape of the conduction band is determined from the experimental values of the effective mass and are found to agree with the theoretical values. It is also shown that the measured effective masses can be used in conjunction with thermal emf data to determine the scattering parameter which enters into the expression for the thermal emf for a nonparabolic but isotropic band. Orig. art. has: 2 figures, 7 formulas, and 1 table.

SUB CODE: 20/ SUBM DATE: 07Apr66/ ORIG REF: 005/ OTH REF: 007

Card 2/2

ACC NR: AP6037023 (A,N) SOURCE CODE: UR/0181/66/008/011/3447/3448

AUTHOR: Fistul', V. I.; Vaynshteyn, V. M.

ORG: none

TITLE: Mechanism of scattering of electrons in In_2O_3 films

SOURCE: Fizika tverdogo tela, v. 8, no. 11, 1966, 3447-3448

TOPIC TAGS: indium compound, electron scattering, Hall effect, semiconducting film, phonon scattering

ABSTRACT: In view of the scarcity of data on carrier scattering in In_2O_3, the authors determined the scattering mechanism of electrons by using the results of measurements of the Hall concentration of the carriers N and the thermoelectric power at room temperatures. In_2O_3 films, undoped and doped with tin, were obtained by reactive cathode sputtering. The films were polycrystalline, strongly textured, and the microcrystal growth was in the [111] direction. The electron gas was degenerate in all samples. From the fact that most experimental points could be reconciled with the theoretical expression for the thermoelectric power it is deduced that scattering is mainly by acoustic phonons. This agrees with the data obtained by R. Weiher (J. Appl. Phys. v. 33, 2834, 1962). The scatter in the experimental values is due to effects connected with the polycrystalline structure of the samples, namely surface phenomena

Card 1/2

ACC NR: AP6037023

and intercrystalline barriers. Orig. art. has: 1 figure and 2 formulas.

SUB CODE: 20/ SUBM DATE: 17Jun66/ OTH REF: 002

Card 2/2

ACC NR: AP7005851 SOURCE CODE: UR/0181/66/008/012/3606/3612

AUTHOR: Iglitsyn, M. I.; Pel', E. G.; Pervova, L. Ya.; Fistul', V. I.

ORG: State Scientific Research and Design Institute of the Rare Metal Industry, Moscow (Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskoy promyshlennosti)

TITLE: Instability of an electron-hole plasma in a semiconductor, due to the nonlinearity of the volt-ampere characteristics

SOURCE: Fizika tverdogo tela, v. 8, no. 12, 1966, 3606-3612

TOPIC TAGS: semiconductor plasma, semiconductor carrier, volt ampere characteristic, plasma instability, carrier density, semiconductor conductivity

ABSTRACT: The conditions for the occurrence of instability in a solid-state plasma are derived theoretically and the conclusions of the theory are checked experimentally with measurements on p-type germanium single crystals doped with gold and antimony. The tests consisted of determining the volt-ampere characteristics and plots of the hole density and hole-capture cross section against the field. The results show that in a crystal in which the electron and hole components of the conductivity are nonlinear (as a result, for example, of the dependence of the recombination cross section on the electric field) oscillations of the conductivity occur. This type of instability has a resonant character. The theoretical calculations yield formulas for the oscillation frequency and for the critical field. The experimentally measured

Card 1/2

ACC NR: AP7005851

period of the oscillations and of the critical field for a germanium crystal doped with gold agreed with the calculated values. The electronic component of the conductivity in such a crystal is shown to have a negative differential resistance. The instability is connected with nonlinearity of the volt-ampere characteristics, and has a resonant character. The authors thank A. Ya. Shul'man, O. V. Konstantinov, V. I. Perel', and D. G. Andrianov for a discussion of the results. Orig. art. has: 3 figures and 15 formulas.

SUB CODE: 20/ SUBM DATE: 13Jun66/ ORIG REF: 002/ OTH REF: 003

Card 2/2

23330 S/058/61/000/006/014/063
A001/A101

24.6600 (1057, 1482)

AUTHORS: Grizhko, V.M., Sikora, D.I., Shkoda-Ul'yanov, V.A., Abramenkov, A.D., Parlag, A.M. Shramenko, B.I., Fisun, A.N.

TITLE: An attempt to determine cross sections of γn-reactions in lead by using a very thick target and a monoenergetic electron beam

PERIODICAL: Referativnyy zhurnal, Fizika, no. 6, 1961, 96, abstract 6B392 ("Dokl. i soobshch. Uzhgorodsk. un-t. Ser. fiz.-matem. n.", 1960, no.3, 1-4)

TEXT: The authors discuss preliminary results of calculations of the cross section of reaction (γ, n) in Pb from the data, obtained by them earlier, on the yield of photoneutrons from a very thick lead target using a monoenergetic electron beam (RZhFiz, 1961, 1B471). The authors are of the opinion that the accuracy of reproducibility of $\sigma(\gamma, n)$ in the region $>$ 15 Mev is by no means worse than in the region of lower energies. They point out that the method of "difference of photons", which was applied formerly for calculations of the cross section, yields the accuracy by 20 - 30% poorer in the region of energies beyond the giant resonance; this can lead to the smoothing out of a possible secondary maximum. The

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authors conclude that the developed method of determining cross sections is especially effective for detecting secondary maxima in the region of γ-quanta energies higher than 15 Mev. The problem of absolute accuracy of the method remains open in the article.

A. Moiseyev

[Abstracter's note: Complete translation]

FISUN, A.N.

83569
S/056/60/038/005/002/050
B006/B070

21.2244
26.2240

AUTHORS: Grishaev, V. M., Sikora, D. I., Shkoda-Ul'yanov, V. A., Abramenko, A. D., Shramenko, B. I., Fisun, A. N.

TITLE: Determination of the Yield of Photoneutrons From Lead Under the Action of Electrons Having Energies From 10.5 to 20.5 Mev (Method of Thick Absorber)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 38, No. 5, pp. 1370-1373

TEXT: In an earlier publication (Ref. 1), some of the authors have calculated the photoneutron yield for some elements with the help of the Belen'kiy-Tamm equilibrium spectrum. Now the authors have experimentally studied the yield of photoneutrons from a lead block that is practically of infinite thickness and absorbs the monochromatic electron beam completely, and compared the results with those of the theory. The present paper describes this work. The experimental method is essentially that suggested by V. I. Gol'danskiy and V. A. Shkoda-Ul'yanov. The experimental arrangement is schematically shown in Fig. 1; the beam catcher can be used simultaneously as a monitor of the electron beam and as the source of

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photoneutrons. The linear accelerator of the Institute (E_{max} = 30 Mev, 50 cps, current pulse duration 1 μsec) was used as the source of electrons. The energy resolution of the apparatus was 0.4%. The neutron yield was measured by a boron counter (Ref. 7) working in the range of direct proportionality between the number of neutrons and the current striking the target. The measurements were made with a current of the order of 10^{-10} a. The counter was calibrated with a standard source of Ra+Be. Fig. 2 shows the measured dependence of the photoneutron yield from the thick lead block on the energy of the electrons between 10.5 and 20.5 Mev (Curve 2). It also shows (Curves 1 and 3) the photoneutron yield calculated from the Belen'kiy-Tamm equilibrium spectrum and the photoneutron excitation functions of Refs. 9 and 10. Every experimental point is the resultant of 5 - 7 measurements. The statistical error in the counting of pulses does not exceed 2%. The background intensity below the threshold of the (γ,n) reaction on carbon is 0.5%, and above this it is ≥ 3%. In the latter case, the neutrons are produced predominantly in the graphite collimator.

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The monochromator was calibrated for absolute energy from the (γ,n) reaction threshold for oxygen and carbon according to an activation method. The experimental results agree better with those of Ref. 10 than with those of Ref. 9. An estimate of the integral photoneutron production cross section yielded the value 2.6 b. Mev. For this estimate, it was assumed that the cross section reaches its maximum value for 13.8 Mev. The authors thank A. S. Litvinenko, A. I. Charkin, V. A. Skubko, V. L. Auslender, V. I. Sonomay, and A. M. Parlag for their assistance in the work; A. K. Val'ter and Ya. A. Grishayev for their interest and discussions; and L. Ye. Lazarev and V. I. Gol'danskiy for their advice. There are 2 figures and 10 references: 4 Soviet and 6 US.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskoy SSR (Institute of Physics and Technology of the Academy of Sciences Ukrainskaya SSR). Uzhgorodskiy gosudarstvennyy universitet (Uzhgorod State University)

SUBMITTED: August 18, 1959 (initially) and December 19, 1959 (after revision)

Card 3/3

S/058/63/000/001/015/120
A062/A101

24.6730

AUTHORS: Sinel'nikov, K. D., Grishayev, I. A., Grizhko, V. M., Fisun, A. N., Zykov, A. I., Kitayevskiy, L. Kh.

TITLE: A 30 MeV energy linear travelling-wave electron accelerator

PERIODICAL: Referativnyy zhurnal, Fizika, no. 1, 1963, 39 - 40, abstract 1A374 (In collection: "Elektron. uskoriteli." Tomsk, Tomskiy un-t, 1961, 3 - 9)

TEXT: The authors describe a 30 MeV linear electron accelerator designed at the Physico-technical Institute of the Academy of Sciences of the Ukrainian SSSR. The accelerator consists of two sections connected with each other - the injector section and the main section (with a constant wave phase speed); the length of the main section is 2.8 m, the value ka = 2.48 (k - wave vector, a - waveguide radius). The two sections are energized by one klystron power amplifier, excited by a magnetron generator. The power dissipated in the main section and in the output load is ~10 Mw (in the load 3.3 Mw); the field intensity is then 150 kV/cm. The accelerating system is composed of separate resonators; the

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electrical contact between them is realized by mechanical ties in the places where the system is connected to the input and output matching transformers. The resonators of the main section are disposed tightly in a copper tube which is also a vacuum housing. The precision of manufacture of the accelerating system (diameter of the resonators and diaphragm apertures) is ± 0.01 mm. The source of electrons is an electron gun operating under the tension of 79 kV (the corresponding electron velocity is 0.5c); the current is 1 amp. in a pulse. The pumping out of the vacuum volume of the accelerator is effected by 5 diffusion pumps; the operating pressure in the klystron amplifier is 2.10^{-7} mm Hg, in the remaining space $3 \div 5 \cdot 10^{-7}$ mm Hg. Measurements have shown that the maximum intensity and energy are attained in the accelerator at the frequency 2796 Mc/s. The mean current of the accelerated electrons is 10 μA for a pulse length of 1 μsec. The diameter of the beam (at the output) under the optimum focusing is 3 - 4 mm, the spectrum width - 8%.

A. Fateyev

[Abstracter's note: Complete translation]

Card 2/2

ARNAUTOV, A.K.; BURSHTEYN, Sh.A.; GENES, V.S.; KOGAN, I.K.; MAMATYUK, Ye.M.; LITVINENKO, A.S.; MOSKALENKO, I.P.; NIKOLAYEVA, M.G.; PISKAREVA, Ye.V.; POPOVA, L.Ya.; RUDNEV, L.I.; SIDYAKIN, V.V.; TKACH, V.K.; FASTYUCHENKO, O.V.; FISUN, A.N.; FRENKEL', L.A.; TSYBENKO, N.A.; SHRAMENKO, B.I.

Comparative study on the effect of X rays (197 kv) and braking radiation generated with linear accelerator (3 Mev) upon animals. Radiobiologiia 2 no.2:211-215 '62. (MIRA 15:4)

1. Khar'kovskiy institut meditsinskoy radiologii i Ukrainskoy fiziko-tekhnicheskiy institut AN USSR, Khar'kov.
(RADIATION--PHYSIOLOGICAL EFFECT)

EWT(m)/EPA(w)-2/EWA(m)-2 Pab-10/Pt-7 IJP(c)

ACCESSION NR: AP5007685 S/0185/65/010/003/0260/0262

Grishayev, I.O. (Grishayev, I.A.); Lytvynenko, A.S. (Litvinenko, A.S.); Nikiforov, V.I.; Fysun, A.M. (Fisun, A.N.)

TITLE: Production of accelerated positron beams on a linear electron accelerator

SOURCE: Ukrayins'kyy fizychnyy zhurnal, v. 10, no. 3, 1965, 260-262

TOPIC TAGS: linear electron accelerator, positron beam, accelerated positron, tantalum converter

ABSTRACT: The production of an intense positron beam is of great importance since [illegible]

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L 47383-65

ACCESSION NR: AP5007685

sections. The conversion factor of electrons into positrons is $2 \cdot 10^{-6}$ positrons/electron at the peak, which produces $1.03 \cdot 10^{6}$ positrons per pulse over a [illegible] energy range. Orig. art. has: 3 figures and 4 formulas.

ASSOCIATION: Fizyko-tekhnichnyy instytut AN URSR, Kharkov (Institute of Physics and Technology, AN URSR)

SUBMITTED: 11Jun64 ENCL: 01 SUB CODE: NP

NO REF SOV: 000 OTHER: 005 ATD PRESS: 3251

PISUN, M.N., inzh. (Novocherkassk)

Stabilization of slopes by means of planting. Put' i put.khoz.
8 no.3:42 '64. (MIRA 17:3)

FISUN, M.N., inzh.

Roadside planting for protecting mountain roads from landslides. Avt.dor. 28 no.9:9-10 S '65.

(MIRA 18:10)

CHUCHALIN, I.F. (s. Novyy Tor"yal Mariyskoy ASSR; FISUN, N.I. (g. Zaporozh'ye); ZAGAYNOV, A.S.; PERKAL'SKIS, B.Sh. (Tomsk); BAGINSKIY, A.P. (Krasnodar)

Suggestions and advice. Fiz. v shkole 23 no.4:71 Jl-Ag '63. (MIRA 17:1)

1. Mokrousovskaya shkola Kurganskoy oblasti (for Zagaynov).

FISUN, V.M., inzh.; PAK, N.V., inzh.

Manufacture of sharply bent stamped and welded pipe bends made of stainless steel. Mont. i spets. rab. v stroi. 25 no.1: 17-20 Ja '63. (MIRA 16:6)

1. Krasnoyarskiy zavod montazhnykh zagotovok tresta Sibtekhmontazh.
(Pipe fittings) (Steel, Stainless)

FISUN, Ya., avtomekhanik

Device for fastening rigid couplings. Avt. transp. 37 no.5:53 My '59. (MIRA 12:8)
(Automobiles--Apparatus and supplies)

AUTHOR: Fisunenko, O.P. 21-1-20/26

TITLE: On the Identity of Odontopteris Aiutensis Zalessky with Neuropteris Obliqua Brongniart (O tozhdestve Odontopteris Aiutensis Zalessky s Neuropteris Obliqua Brongniart)

PERIODICAL: Dopovidi Akademii Nauk Ukrains'koi RSR, 1958, # 1, pp 85-88 (USSR)

ABSTRACT: The author questions the existence of a new species, Odontopteris aiutensis Zalessky, the name of which was introduced by Zalessky to identify an imprint of the tip of a frond found in the Carboniferous deposits of the Donets basin. The data on the species, Neuropteris obliqua Brongniart, assembled by the author, indicate the identity of this species with Odontopteris aiutensis Zalessky, because of similarity in their structural features.

The article contains 4 figures, 1 table and 4 Russian references.

Card 1/2

21-1-20/26

On the Identity of Odontopteris Aiutensis Zalessky with Neuropteris Obliqua Brongniart

ASSOCIATION: Trust "Voroshylovhradvuhlekheolohiya"

PRESENTED: By Academician of the Ukrainian Academy of Sciences V.G. (V.H.) Bondarchuk

SUBMITTED: 26 March 1957

AVAILABLE: Library of Congress

Card 2/2 1. Entomology

AUTHOR: Fisunenko, O.P. SOV-21-58-9-24/28

TITLE: On the Reproductive Organs of "Calamites Cistii" Brongniart (O generativnykh organakh "Calamites cistii "Brongniart)

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, 1958, Nr 9, pp 1006 - 1009 (USSR)

ABSTRACT: While carrying out paleobotanic investigations in the Seleznevka rayon of the Donets basin, the author discovered a specimen in the roof of the h_{11} coal seam, on the basis of which he assumes that sporogenous ears of "Palaeostachya elongata" (Presl) Weiss belong to those plants, the trunks of which are known under the name of "Calamites Cistii" Brongn. The author supports his assumption by observations on the distribution of the trunk and sporogenous ears on the specimen.

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SOV-21-58-9-24/28

On the Reproductive Organs of "Calamites Cistii" Brongniart

He describes individual parts of the plant as organs belonging to one and the same paleontological species "Calamites Cistii" Brongn. There is 1 photo and 4 Soviet references.

ASSOCIATION: "Luganskuglegeologiya" Trust

PRESENTED: By Member of the AS UkrSSR, V.G. Bondarchuk

SUBMITTED: April 3, 1958

NOTE: Russian title and Russian names of individuals and institutions appearing in this article have been used in the transliteration

1. Geology--USSR 2. Paleoecology

Card 2/2

FISUNENKO, O.P.

Some plants from middle Carboniferous deposits of the Donets Basin. Geol.zhur. 18 no.5:79-83 '58. (MIRA 12:1)
(Donets Basin--Paleobotany)

FISUNENKO, O.P.

New representative of the genus Pholidophloios Zalessky from Carboniferous sediments of the Donets Basin. Dop.AN URSR no.10:1436-1439 '60.
(MIRA 13:11)

1. Trest "Luganskgeologiya." Predstavleno akademikom AN USSR V.G.Bondarchukom [Bondarchuk, V.H.].
(Donets Basin--Lycopodiales, Fossil)

FISUT, V.

2

CZECHOSLOVAKIA

FISUT, V; FOJTOVA, L; LANGER, J.

1. First Internal Medicine Clinic of the Medical Faculty of Komensky University (I. Interna klinika Lek. fak. Univ. Komenskeho), Bratislava; 2. Institute of Pathological Anatomy of the Medical Faculty of Komensky University (Ustav patologickej anatomie Lek. fak. Univ. Komenskeho), Bratislava (for all)

Bratislava, Bratislavske lekarske listy, No 9, 1963, pp 548-553

"Malignant Thyroma as the Cause of Hydropericardium."

L 06490-67 EWT(m)/EWP(e) WH

ACC NR: AP6028303 SOURCE CODE: UR/0363/66/002/006/1119/1123

AUTHOR: Matveyev, M. A.; Khodskiy, L. G.; Fisyuk, G. K.; Bolutenko, A. I.; Strugach, L. S. 26 25 13

ORG: Institute of General and Inorganic Chemistry, BSSR (Institut obshchey i neorganicheskoy khimii BSSR)

TITLE: Some properties of glasses based on the systems $BaO-TiO_2-B_2O_3$, $BaO-TiO_2-P_2O_5$, $BaO-TiO_2-SiO_2$

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 6, 1966, 1119-1123

TOPIC TAGS: borate glass, phosphate glass, silicate glass, titanium dioxide

ABSTRACT: Glasses of the systems $BaO-TiO_2-B_2O_3$, $BaO-TiO_2-P_2O_5$ and $BaO-TiO_2-SiO_2$ were synthesized from barium carbonate, ammonium monohydrogen phosphate, boric acid, titanium dioxide and quartz sand by melting at 1300-1400°C, and the properties of the glasses were measured on annealed cylindrical specimens. The dependence of the volume electrical resistivity, temperature of the start of softening, chemical stability (to boiling in distilled water), density, and microhardness on the composition was measured, and the crystallizability was determined from tests in a gradient furnace and from thermographic studies. Titanium was shown to decrease the electrical resistivity of the glasses, particularly when it is present in a lower oxidation state. As a rule,

Card 1/2 UDC: 539.213

L 06490-67

ACC NR: AP6028303

not more than one compound is formed during the crystallization of the glasses studied; in silicate glasses, barium silicotitanate $BaO \cdot TiO_2 \cdot SiO_2$ crystallizes out. Low-melting glasses with a high electrical resistivity (10^{11}-10^{12} ohm cm) were synthesized, and were found to have a satisfactory chemical stability. Orig. art. has: 5 figures and 2 tables.

SUB CODE: 11/ SUBM DATE: 28Jun65/ ORIG REF: 013/ OTH REF: 003

Card 2/2

FISYUKOV, Ivan Yevment'yevich; LARINA,L.M., redaktor; GOLICHENKOZA,A.A., tekhnicheskiy redaktor

[In the struggle for coal] V bor'be za ugol'. [Moskva] Izd-vo VTsSPS Profizdat, 1955. 78 p. (MLRA 9:4)

1. Predsedatel' shakhtkoma shakhty imeni Rumyantseva (for Fisyukov)
(Donets Basin--Coal mines and mining)

FISYUN, V.V. --

"Flora and Vegetation in the Chu-Iliyski Mountains." Cand Biol Sci, Inst of Botany, Acad Sci Kazak SSR, Alma-Ata, 1953. (RZhBiol, No 2, Sep 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (10)

SO: Sum. No. 481, 5 May 55

Country : USSR M
Category: Cultivated Plants. Medicinal. Essential Oil-Bearing. Toxins.

Abs Jour: RZhBiol., No 22, 1958, No 100493

Author : Fisyun, V.V.
Inst : AS Kazakh SSR
Title : Materials on the Study of Turkestan Soaproot.

Orig Pub: Izv. AN KazSSR, Ser. biol., 1957, vyp. 1, 26-30.

Abstract: Turkestan soaproot - Acanthopyllun [sic] gypsophiloides Rgl. (of the family Caryophylaceae) is a perennial herbaceous plant with a powerfully developed main root. It grows only in the southern republics of USSR (Kazakhstan, Kirghiz, Uzbek, Tadzhik, Turkmen). Because of

Card : 1/3

Country : USSR
Category: Cultivated Plants. Medicinal. Essential Oil-Bearing. Toxins.

M

Abs Jour: RZhBiol., No 22, 1958, No 100493

the high content of saponins, the roots are procured on commercial scale. They are used in metallurgy for the formation of dross in electrolytic baths. In medicine, saponins are used as an expectorant and a diuretic remedy. They are used in the treatment of chronic eczema and skin itch. In view of the fact that intensified utilization of comparatively small areas of the natural growths of soaproot leads to their exhaustion, observations were conducted on the experimental sowings during 1951-1953, on the basis of which conclusions were reached

Card : 2/3

Country : USSR
Category: Cultivated Plants. Medicinal. Essential Oil-Bearing. Toxins.

M

Abs Jour: RZhBiol., No 22, 1958, No 100493

that Turkestan soaproot under the conditions of cultivation, has time to pass through all developmental stages (from seed to seed) in the course of one vegetation period. The best time for the sowing of the seeds is in fall, under the snow. Development of the plants in the first year of life is protracted in comparison with the development under natural conditions. Application of complete mineral fertilization promotes the accelerations of the growth and development of the plants. -- L.N. Korolev

Card : 3/3

M

USSR/Cultivated Plants - Medicinal. Essential Oil-Bearing. Toxins.

Abs Jour : Ref Zhur Biol., No 18, 1958, 82588

Author : Fisyun, V.V.

Inst : Institute of Botany KazakhSSR

Title : Conditions of the Growth of Anabasis aphylla in Some Regions of South Kazakhstanskaya Oblast'.

Orig Pub : Tr. In-ta botan. AN KazSSR, 1957, 5, 270-283

Abstract : Anabasis aphylla is the principal raw material for obtaining anabasine sulfate the only effective vegetable insecticide. Its procurement is carried on in Frunzenskiy, Shaul'derskiy; Turkestanskiy and Arysskiy regions of South Kazakhstanskaya Oblast' where it is encountered on primary sierozem, sierozem and meadow-saline soils in wormwood-saltwort and ephemeral saltwort vegetative

Card 1/2

PAVLOV, N.V., akademik; AGEYEVA, N.T.; BAYTENOV, M.B.; GOLOSKOKOV, V.P., kand.biolog.nauk, red.; KORNILOVA, V.S.; POLYAKOV, P.P.. Prinimali uchastiye: VASIL'YEVA, A.N.; ORAZOVA, A.; FISYUN, V.V.. BYKOV, B.A., red.; KUBANSKAYA, Z.V., kand.biolog.nauk, red.; SUVOROVA, R.I., red.; ALFEROVA, P.F., tekhn.red.

[Flora of Kazakhstan] Flora Kazakhstana. Glav.red.N.V.Pavlov. Sost.N.T.Ageeva i dr. Alma-Ata. Vol.3. 1960. 457 p.
(MIRA 13:5)

1. Akademiya nauk Kazakhskoy SSR, Alma-Ata. Institut botaniki. 2. AN KazSSR (for Pavlov). 3. Chlen-korrespondent AN KazSSR (for Bykov).
(Kazakhstan--Dicotyledons)

BAYTENOV, M.B.; BYKOV, B.A.; VASIL'YEVA, A.N.; GAMAYUNOVA, A.P.; GOLOSKOKOV, V.P., kand.biolog.nauk; DOBROKHOTOVA, K.V.; KORNILOVA, V.S.; FISYUN, V.V.; PAVLOV, N.V., akademik, glavnyy red.; KUBANSKAYA, Z.V., kand.biolog.nauk; SUVOROVA, R.I., red.; ALFEROVA, P.F., tekhn.red.

[Flora of Kazakhstan] Flora Kazakhstana. Glav.red. N.V.Pavlov. Sost.M.B.Baitenov i dr. Alma-Ata, Izd-vo Akad.nauk Kazakhskoi SSR. Vol.4. 1961. 545 p. (MIRA 14:4)

1. AN Kazakhskoy SSR (for Pavlov). 2. Chlen-korrespondent AN KazSSR (for Bykov).
(Kazakhstan--Botany)

BAYTENOV, M.S.; VASIL'YEVA, A.N.; GAMAYUNOVA, A.P.; GOLOSKOKOV, V.P.; ORAZOVA, A.; ROLDUGIN, I.I.; SEMIOTROCHEVA, N.L.; FISYUN, V.V.; TEREKHOVA, V.I.; PAVLOV, N.V., akademik, glav. red.; BYKOV, B.A., red.; GOLOSKOKOV, V.P., kand. biolog. nauk, red.; KUBANSKAYA, Z.V., kand. biolog. nauk, red.; SUVOROVA, R.I., red.; ALFEROVA, P.F., tekhn. red.

[Flora of Kazakhstan] Flora Kazakhstana. Glav. red. N.V.Pavlov i dr. Alma-Ata, Izd-vo Akad. nauk Kazakhskoi SSR. Vol.5. 1961. 512 p. (MIRA 14:10)

1. AN Kazakhskoy SSR (for Pavlov). 2. Chlen-korrespondent AN Kazakhskoy SSR (for Bykov).
(Kazakhstan—Leguminosae)

VASIL'YEVA, A.N.; GAMAYUNOVA, A.P.; GOLOSKOKOV, V.P., kand. biol. nauk; ORAZOVA, A.; ROLDUGIN, I.I.; SEMIOTROCHEVA, N.L.; FISYUN, V.V.; MENZHULINA, N.A., red. ; ALFEROVA, P.F., tekhn. red.

[Illustrated guide to plants of the family Leguminosae of Kazakhstan] Illiustrirovannyi opredelitel' rastenii semeistva bobovykh Kazakhstana. Alma-Ata, Izd-vo Akad. nauk Kazakhskoi SSR, 1962. 357 p. (MIRA 15:6)

1. Akademiya nauk Kazakhskoy SSR, Alma-Ata. Institut botaniki. (Kazakhstan—Leguminosae)

VASIL'YEVA, A.N.; GAMAYUNOVA, A.P.; GOLOSKOKOV, V.P., kand. biol. nauk; KARMYSHEVA, N.Kh.; KOROVIN, Ye.P.; OBRAZOVA, A.; ROLDUGIN, I.I.; SEMIOTROCHEVA, N.L.; PISYUN, V.V.; PAVLOV, N.V., akademik, glav. red.; SUVOROVA, R.I., red.; ALFEROVA, P.F., tekhn. red.

[Flora of Kazakhstan] Flora Kazakhstana. Glav. red. N.V.Pavlov. Sost. A.N.Vasil'eva i dr. Alma-Ata, Izd-vo Akad. nauk Kazakhskoi SSR. Vol.6. 1963. 462 p. (MIRA 16:6)

1. Akademiya nauk Kazakhskoy SSR(for Pavlov).
(Kazakhstan--Botany)

VASIL'YEVA, A.N.; GAMAYUNOVA, A.P.; GOLOSKOKOV, V.P., kand. biol. nauk; DMITRIYEVA, A.A.; KARMYSHEVA, N.Kh.; KUBANSKAYA, Z.V., kand. biol. nauk; ORAZOVA, '.; PAVLOV, N.V., akademik; ROLDUGIN, I.I.; SEMIOTROVKHEVA, N.L.; TEREKHOVA, V.I.; FISYUN, V.V.; TSAGOLOVA, V.G.; SUVOROVA, R.I., red.; IVANOVA, E.I., red.; BYKOV,B.A., red.

[Flora of Kazakhstan] Flora Kazakhstana. Glav. red. N.V. Pavlov. Sost. A.N.Vasil'yeva i dr. Alma-Ata, Izd-vo AN Kazakh. SSR. Vol.7. 1964. 494 p. (MIRA 17:6)

1. Akademiya nauk Kaz.SSR (for Pavlov). 2. Chlen-korrespondent AN KazSSR (for Bykov).

VASIL'YEVA, A.N.; GAMAYUNOVA, A.P.; DMITRIYEVA, A.A.; GOLOSKOV, V.P., kand. biol. nauk; ZAYTSEVA, L.G.; KARMYSHEVA, N.Kh. ORAZOVA, A.; PAVLOV, N.V., akademik; ROLDUGIN, I.I.; SEMIOTROCHEVA, N.L.; TEREKHOVA, V.I.; FISYUN, V.V.; TSAGALOVA, V.G.; SUVOROVA, R.I., red.

[Flora of Kazakhstan] Flora Kazakhstana. Glav. red. N.V. Pavlov. Alma-Ata, Nauka. Vol.8. 1965. 444 p. (MIRA 18:5)

1. Akademiya nauk Kaz.SSR (for Pavlov).

MAKODZEBA, I.A.; FISYUNOV, A.V.

Fecundity of some weeds. Bot. zhur. 47 no.9:1358-1362 S '62.
(MIRA 16:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut kukuruzy, Dnepropetrovsk.

(Weeds)

MAKODZEBA, I.A., kand.sel'skokhoz.nauk; FISYUNOV, A.V., aspirant

Sensitivity of corn to simazine. Zashch.rast.ot vred.i bol. 5 no.7:30 Jl '60. (MIRA 16:1)

1. Vsesoyuznyy institut kukuruzy, g. Dnepropetrovsk.
(Corn (Maize)) (Triazine)

FISYUNOV, A.V., kand. sel'skokhoz. nauk

Atrazine and simazine in millet fields. Zashch. rast. ot vred. i bol. 8 no.3:20-21 Mr '63. (MIRA 17:1)

1. Vsesoyuznyy institut kukuruzy, Dnepropetrovsk.

FISYUNOV, A.V.

Biennial weeds of the Ukrainian steppe in autumn and winter.
Ukr. bot. zhur. 21 no.3:71-74 '64 (MIRA 17:7)

1. Vsesoyuznyy nauchno- issledovatel'skiy institut kukuruzy, Dnepropetrovsk.

FISYUNOV, A.V.

Wintering of weed sprouts in the steppes of the Ukraine. Bot. zhur. 50 no.1:132-138 Ja '65. (MIRA 18:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut kukuruzy, Dnepropetrovsk.

FISZ, JERZY

PHASE I BOOK EXPLOITATION POL/4904

Z zagadnień techniki wojennej: Broń termojądrowa, BSP, automatyka, radiolokacja, telewizja, podczerwień, pociski rakietowe, hydroakustyka (Problems in Military Technology: Thermonuclear Weapons, Radiation Warfare (BSP), Automation, Radar, Television, Infrared, Rocket Missiles, Hydroacoustics) Warsaw, Wydawn. Ministerstwa Obrony Narodowej, 1959. 370 p. Errata slip inserted. 3,000 copies printed. (Series: Biblioteka wiedzy wojskowej. Seria II)

Scientific Ed.: Henryk Sajnański; Ed.: Michał Wróblewski; Tech. Ed.: Kazimierz Szubert.

PURPOSE: This book is intended for the general reader interested in modern weapon developments.

COVERAGE: The book contains 11 articles in which the various types of modern weapon systems are discussed. The information is based on Western sources. The basic principles of atomic reactions are given and atomic explosions are described citing as examples the Hiroshima and Nagasaki bombs. Theory concerning radiation substances and the effects of radiation on living

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organisms are explained. Automation in artillery, aviation, and radar are described and some information on computers is included. Fundamentals of radar systems are given and basic radar equipment is described. The book also covers ground installations and equipment for aircraft guidance, ground installations for artillery fire control, installations on aircraft and naval installations. The principles of television are explained and possible uses of television in the armed forces are given. Infrared military equipment including telescopes, cameras, sights, thermo-pelengators, telephones, night vision apparatus, etc., are briefly described. Fundamentals of hydrolocation are given and propagation of sound waves in various media is described. The application of acoustics in the detection of fuses is pointed out. In the field of missiles the principle of their operation and a brief history of missile development are given. Mobile and stationary launchers are discussed and some information on rocket launching from aircraft and naval units is given. Remote control and self-guidance systems are briefly discussed, as are television guidance and antimissile defense. No personalities are mentioned. There are no references.

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Problems in Military (Cont.) POL/4904

AVAILABLE: Library of Congress (UG485.Z2)

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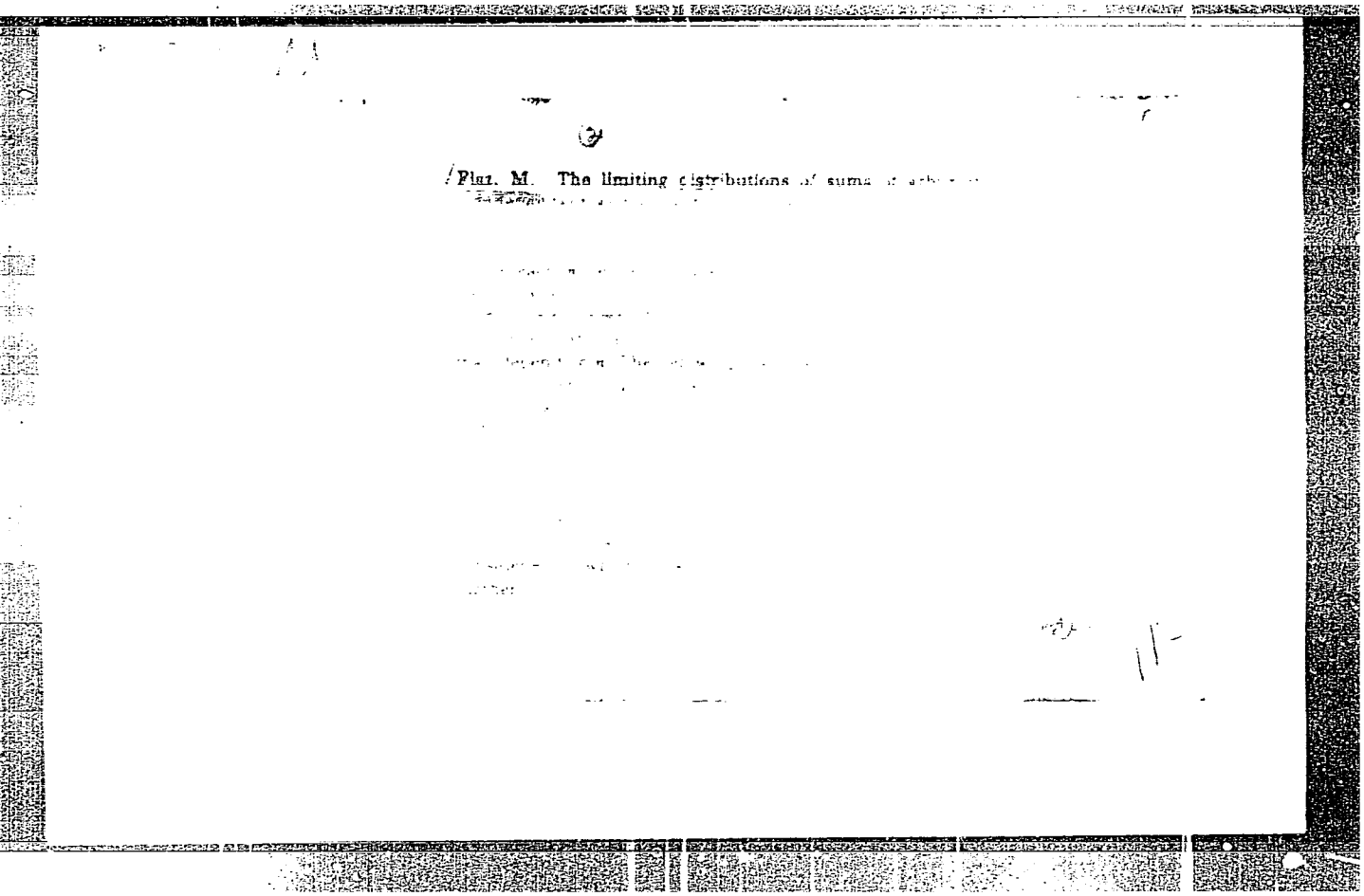
FISZ, M.

Mathematical Reviews
Vol. 16 No. 2
Feb. 1954
Analysis

Fisz, M. The limiting distribution of the difference of two Poisson random variables. Zastosowania Mat. 1, 41–45 (1953). (Polish. Russian and English summaries)

The statement is proven that if the random variables X_1 and X_2 are independent and have Poisson distributions with $E(X_1)=\lambda_1$, $E(X_2)=\lambda_2$, then their standardized difference $X=[(X_1-X_2)-(\lambda_1-\lambda_2)]/(\lambda_1+\lambda_2)^{\frac{1}{2}}$ has asymptotically distribution $N(0, 1)$ as $\lambda_1\to+\infty$ and $\lambda_2\to+\infty$. This is obvious since then X_1 and X_2 are each asymptotically normal. The author could have concluded that already $\lambda_1+\lambda_2\to+\infty$ is sufficient for X having asymptotically distribution $N(0, 1)$. Of interest is a numerical tabulation for $\lambda_1=2$, $\lambda_2=1$, given in the paper, which suggests that even for different and fairly small λ_1, λ_2 the normal approximation is good. *Z. Birnbaum* (Seattle, Wash.).

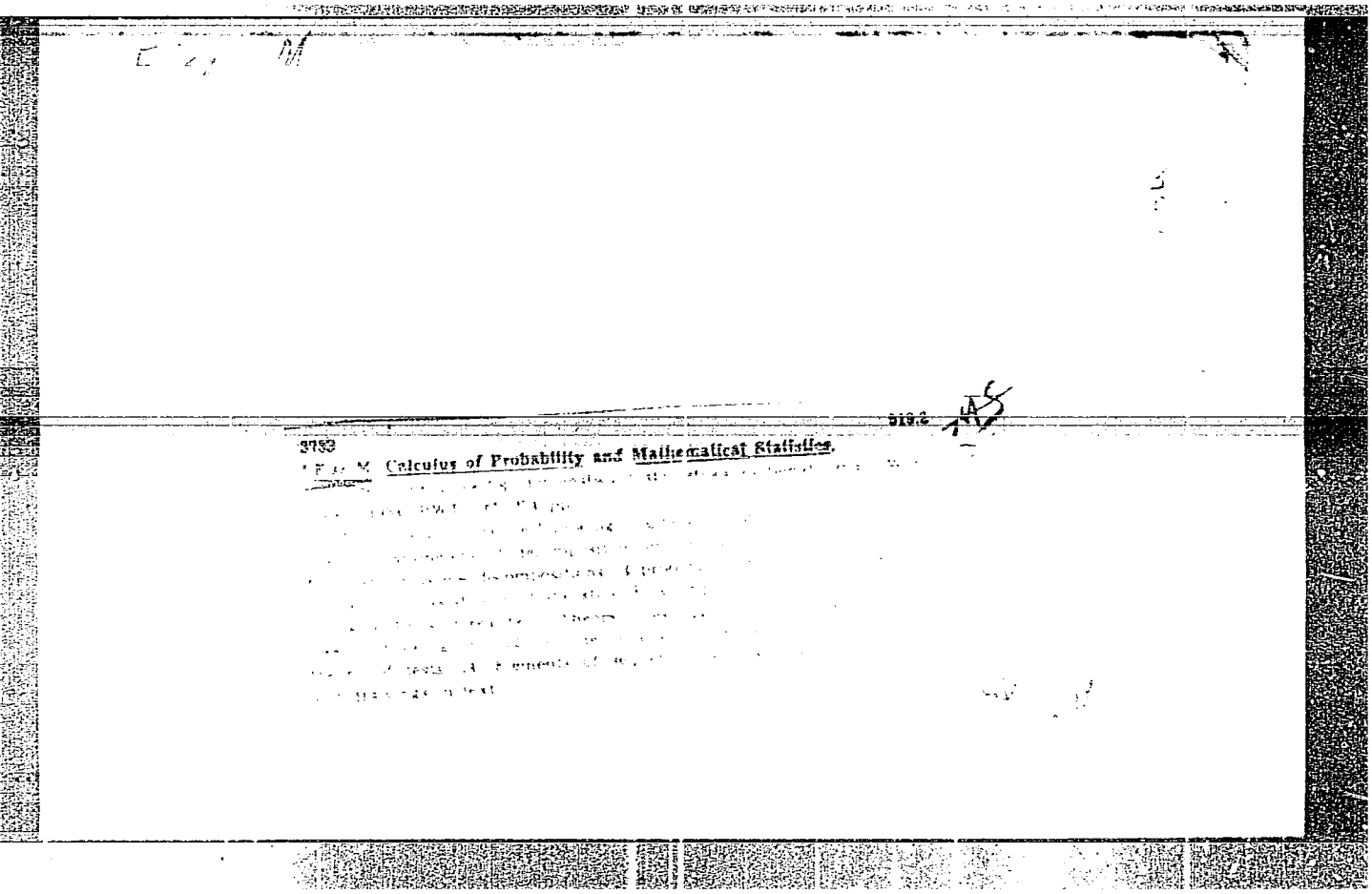


/Plur. M. The limiting distributions of sums

Fisz, M. The limiting distributions of sums of arbitrary independent and equally distributed r-point random variables. Studia Math. 14 (1953), 111-123 (1954).

Proofs of results announced earlier [Bull. Acad. Polon. Sci. Cl. III. 1, 235–238 (1953); these Rev. 15, 635].

J. Wolfowitz (Ithaca, N. Y.).



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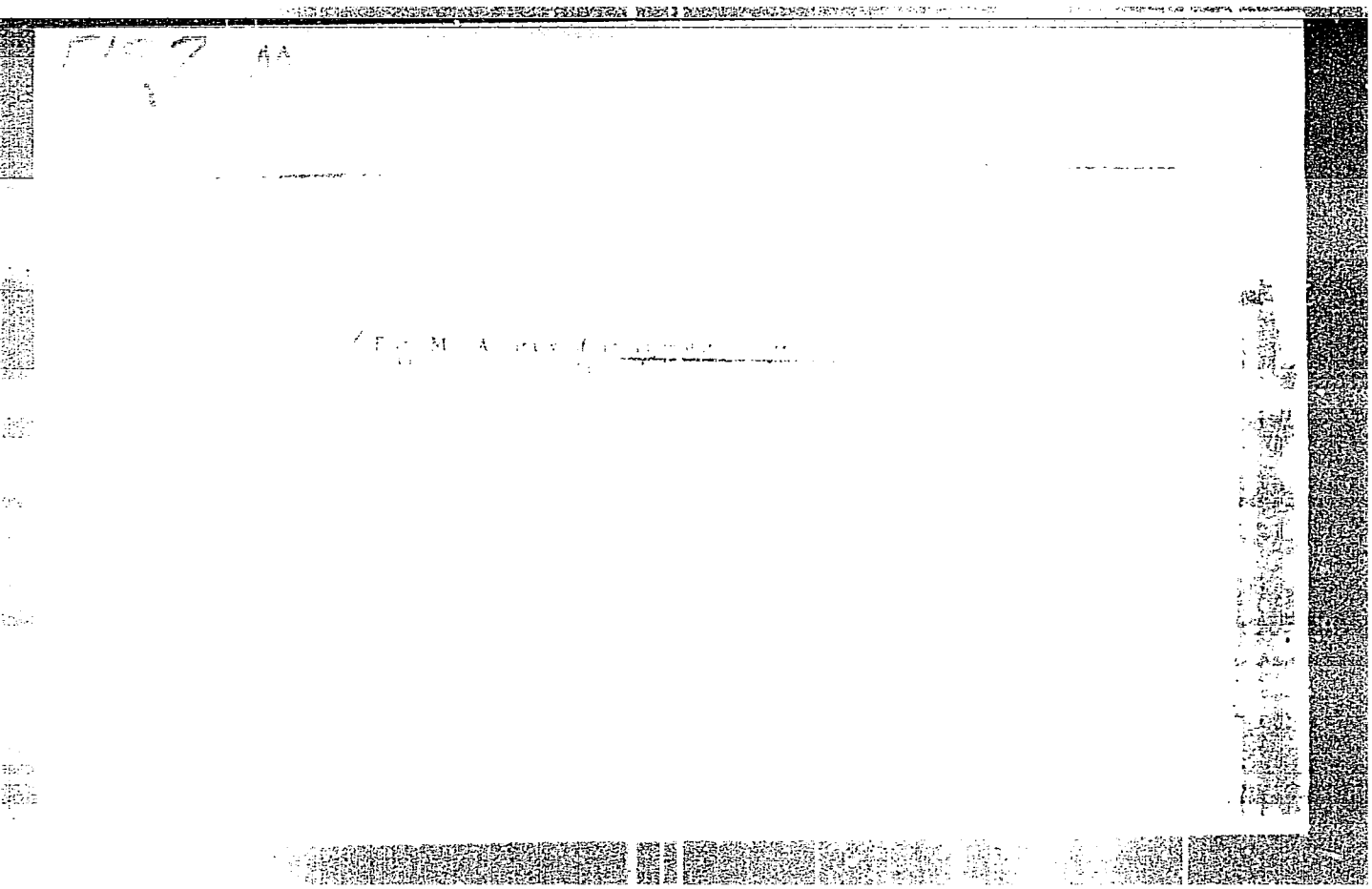
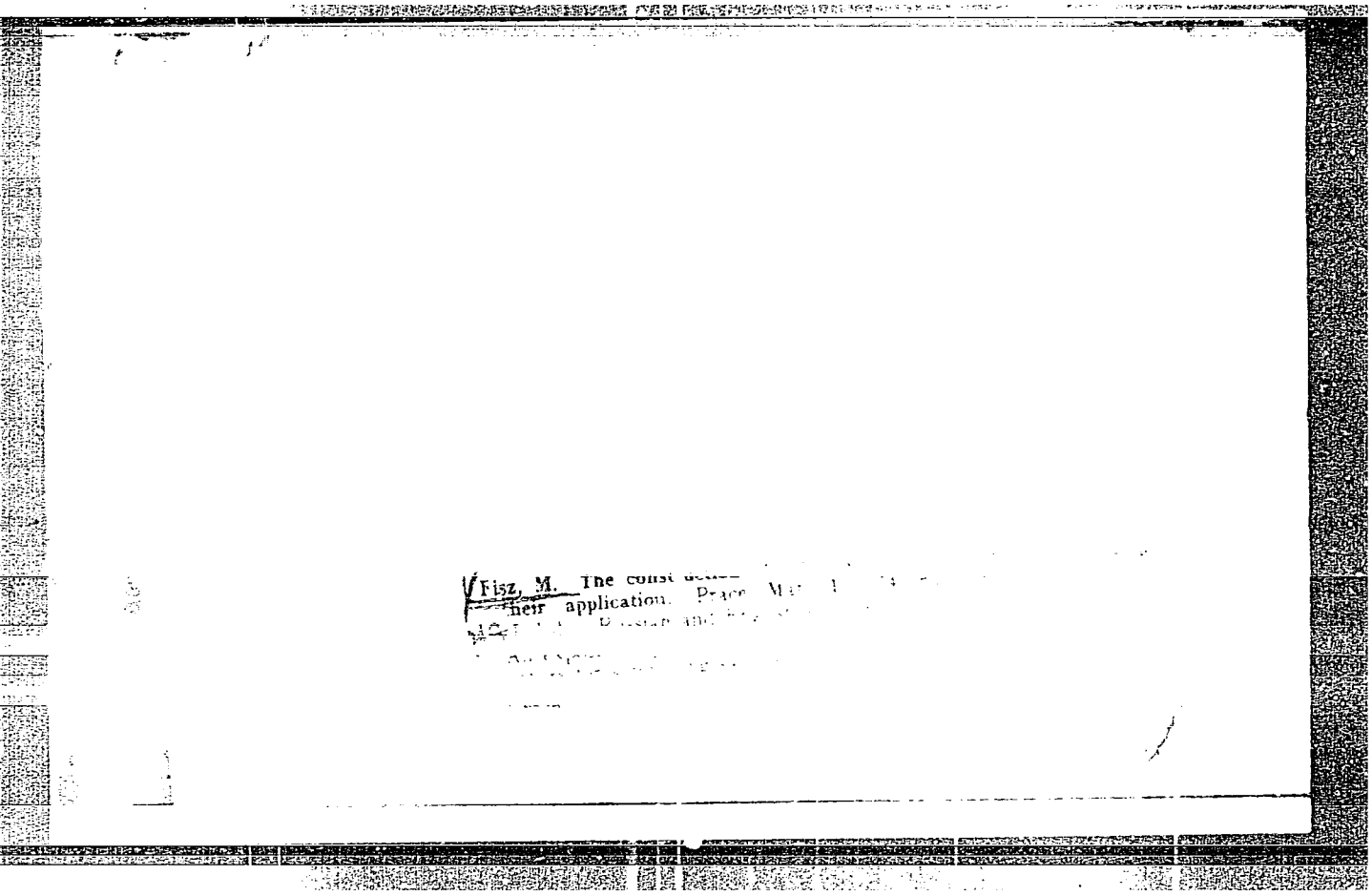
Calculus of Probability and Mathematical Statistics.





Fisz, M. The const
their application. Peace M

FISZ, M.

FISZ, M. Some remarks on the calculus of probabilities. p. 285.

Vol. 1 No. 4 1955.
KOSMOS.
Poland
SCIENCE

So: East European Accessions, Vol. 5, May 1956

Fisz, M. Refinement of a probability limit theorem and its application to Bessel functions

Sci. Hungar. ...

The difference between ... variables is asymptotic ... asymptotic expansion ... using the general error ... of this expansion he obtains ... Bessel functions of order k ...

M. ...

1-FW

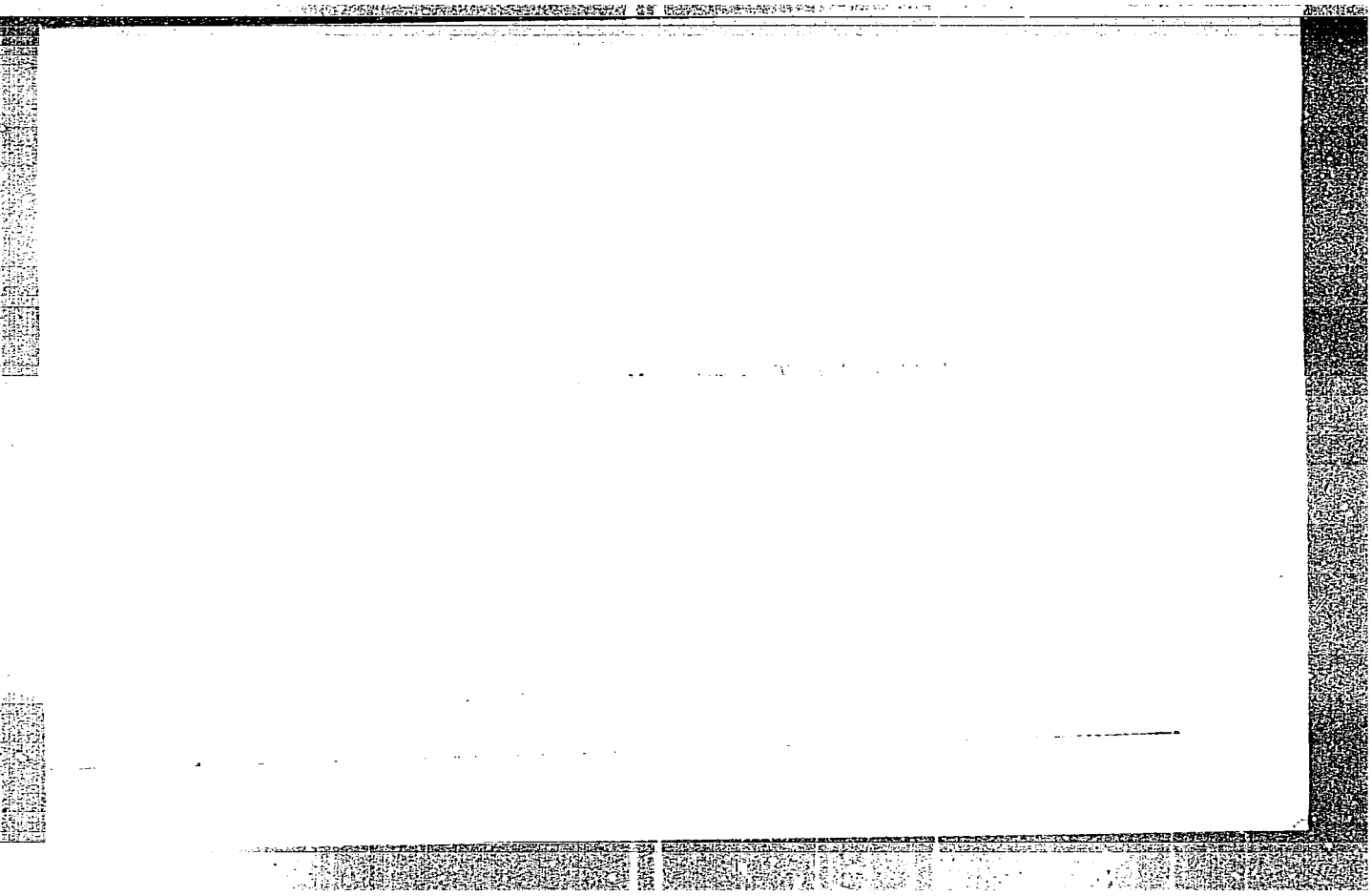
FISZ, M.

Fisz, M. A limit theorem for a modified Bernoulli scheme. Studia Math. 15 (1955), 80–83.

Generalization of a previous result on multinomial distributions [Studia Math. 14 (1954), 272–275; MR 16, 839] when the number of components tend to ∞.

K. L. Chung (Syracuse, N.Y.).

1 - P/W



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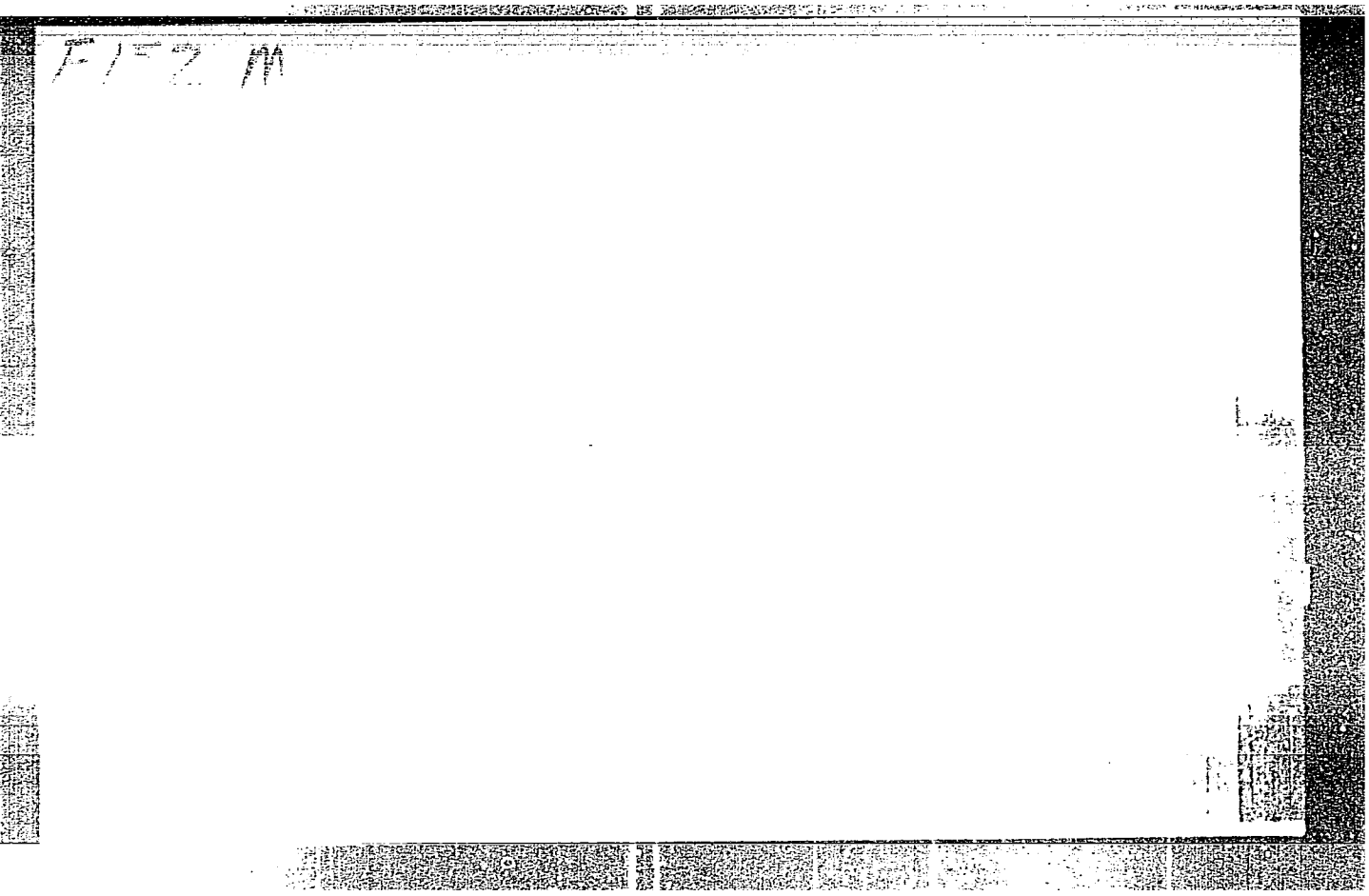

FISZ, M.

The realizations of some purely discontinuous stochastic process. In English p.63
BULLETIN. Varsovie
Vol. 4, no. 2, 1956

So. East European Accessions List Vol. 5, No. 9 September 1956

RYSZ, M., Urbanik, K.

Analytical characterization of a co posed nonhomogeneous Poisson process.
In English. p. 329.
(STUDIA MATHEMATICA. Vol. 15, no. 3, 1956, Warszawa, Poland)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, no. 12, Dec. 1957.
Uncl.

PISZ, H.

Realization of some stochastic processes. In English. p. 359.
(STUDIA MATHEMATICA. Vol. 15, no. 3, 1956. Warszawa, Poland)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, no. 12, Dec. 1957.
Uncl.

★Czechowski, T.; Fisz, M.; Iwiński, T.; Lange, O.; Sadowski, W.; i Zasępa, R. Tablice statystyczne. [Statistical tables.] Edited by Wiesław Sadowski. Państwowe Wydawnictwo Naukowe, Warsaw, 1957. 158 pp. 32 zł.

This collection contains the usual "classical" tables and, in addition, a number of useful tabulations of recent origin. Among the former are tables of the normal, binomial, Poisson, Chi-square, t, z, and F distributions; a page of tables dealing with the sample correlation coefficient; random numbers; assorted auxiliary tables such as binomial coefficients, squares, cubes, roots, logarithms, etc. Among the newer tables are those dealing with distribution-free techniques such as run-tests, sign-test, Kolmogorov's statistic D_n, Smirnov's $D_{m,n}$, and two entirely new tables of "golden" and "iron" numbers due to H. Steinhaus. The tables are selected and edited with great care, and the explanatory text is excellent.

Z. W. Birnbaum (Seattle, Wash.).

FISZ, M.

A limit theorem for empirical distribution functions. In English. p. 71.

STUDIA MATHEMATICA. (Polska Akademia Nauk) Warszawa, Poland. Vol. 17, no. 1, 1958.

Monthly List of East European Accessions (EEAI) LC, Vol. 9, no. 1, Jan. 1960.

Uncl.

16(1), (2) PHASE I BOOK EXPLOITATION POL/2129

Fisz, Marek

Rachunek prawdopodobienstwa i statystyka matematyczna (Probability Theory and Mathematical Statistics) 2d ed., rev. and enl. Warszawa, PWN, 1958. 530 p. (Series: Biblioteka matematyczna, t. 18) Errata slip inserted. 5,000 copies printed.

Editorial Board of Series: Stanisław Golab, Bronisław Knaster, Kazimierz Kuratowski, Stanisław Mazur, Władysław Orlicz, Marceli Stark (Ed.), and Stefan Straszewicz.

PURPOSE: This book is intended for readers interested in the fundamentals of modern probability theory and mathematical statistics. It can be used as a textbook by senior students.

COVERAGE: This is the second edition of the book under the same title but considerably enlarged and revised; new chapters concerning Markov chains, stochastic processes and the theory of series have been added, certain concepts modified, and many chapters expanded and reorganized. The number of examples illustrating the application of probability theory and

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mathematical statistics to various fields has been considerably increased. The book, therefore, may be treated as entirely new. The book consists of two parts. The first part deals with probability theory. Using contemporary contributions in this field, the author has constructed a mathematical model of the theory based on modern concepts. In the second part of the book the author deals with mathematical statistics, presenting methods of solution of many statistical problems using probability theory. In connection with statistical studies, the probability theory itself is extended, especially in fields which are close to probability theory. Many references are given in connection with the questions studied which provide valuable information for people interested in more advanced studies of these problems. The author thanks Professor Dr. Edward Marczewski for his assistance in preparing the first edition and Docent Dr. Kazimierz Urbanik for his help with the second edition. He also thanks Masters Lech Kubik, Rolf Selanke, and Józef Wloc for their assistance. There are 202 references: 14 Polish, 40 Soviet, 103 English, 22 French, 17 German, 5 Italian, and one Dutch.

TABLE OF CONTENTS:

PART I. PROBABILITY THEORY